REMARKS

Claims 1-4 are pending. Claims 1-4 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Keen et al. (Biotechnology in Plant Disease Control (Chet, ed.), pp. 65-88, 1993). Claims 1-2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jaynes et al. (Plant Science, 89:43-53, 1993) in view of Daniell et al. (U.S. Patent No. 5,693,507, filed on July 20, 1994). Applicants address each of these rejections as follows.

Title

The Office states (page 2 of the Office Action) that the title of the invention is not descriptive of the instant invention. Applicants have amended the title to read "Methods of identifying plant disease-resistance genes," as indicated above in the amendments to the specification. No new matter has been added by this amendment. Applicants submit that this title is clearly indicative of the invention to which the claims are directed.

Sequence Identifiers

The Office states (page 2 of the Office Action) that sequence identifiers are missing from Table 1 on page 31 and from page 40, line 8 of the specification. Applicants have amended the specification to include sequence identifiers in these locations. In addition, a typographical error in the sequence listing for SEQ ID NO: 194 has been corrected: the amino acid in the fifth position is Thr, Ala, or Ser, consistent with the preliminary amendment filed on July 2, 2003. No new matter has been added by these amendments. Applicants submit that the amended specification complies with the requirements of 37 CFR § 1.821 through 1.825.

Rejections under 35 U.S.C. § 112, first paragraph

Claims 1-4 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In particular, the Office has rejected the claims on the grounds that (i) the specification does not provide guidance for identifying plant resistance genes by introducing candidate genes into plant tissue via biolistic transformation and assaying the plant tissue for disease resistance, (ii) any plant tissue alone cannot be used in the method, and (iii) the use of cDNA libraries in the claimed method was considered "a major technical obstacle."

With respect to (i), Applicants note that, as amended, claim 1 is directed to methods to identify a plant disease-resistance gene that involves providing a plant tissue sample that includes a mutant disease-resistance gene, which the Office acknowledges is enabled by the present specification (see Office Action, p. 3, lines 20-21). In view of the present amendment, this aspect of the rejection is moot.

With respect to (ii), Applicants point out that, on page 47, lines 19-24, their specification describes biolistic transformation of a plant tissue sample, such as a piece of tissue from a leaf, with a candidate plant disease-resistance gene. Additionally, on pages 48-52, the use of leaf material in a screening assay is described. In light of the fact that Applicants have demonstrated the successful deployment of a functional screening assay using plant tissue, there is no reason to limit the claimed method to requiring the use of an entire intact plant. Furthermore, Applicants note that Keen, on page 80, lines 2-7, makes clear that plant tissue can be utilized in their method. Accordingly, Applicants respectfully request that this aspect of the rejection be withdrawn.

Turning to (iii), Applicants first note that, at the time the application was filed, their specification enabled the full scope of the presently claimed invention without undue experimentation. Applicants' specification states (page 52, lines 16-30):

> Using this assay, any plant disease-resistance gene may be identified from a cDNA expression library. In one particular example, a cDNA library is constructed in an expression vector

> and then introduced as described herein into a plant cultivar or its corresponding mutant plant lacking the resistance gene of interest. Preferably, the cDNA library is divided into small pools, and each pool co-introduced with a reporter gene. If a pool contains a resistance gene clone (i.e., the pool "complements" the resistance gene function), the positive pool is divided into smaller pools and the same procedure is repeated until identification of a single positive clone is ultimately achieved. This approach facilitates the cloning of any resistance gene of interest without genetic crosses or the creation of transgenics.

The specification therefore provides a method for the use of cDNA libraries that describes the use of multiple small cDNA pools, which, due to their reduced size, are significantly easier to generate and use for transformation of plant cells. Moreover, nothing in Keen or in the Office's basis for rejection indicates that the claimed method is inoperable. Applicants submit that the Office has therefore applied a standard of perfection with respect to enablement that finds no basis in the statute or the case law. The Office is seemingly requiring that every conceivable embodiment or possible application of Applicants' method perform successfully, with failures in thought experiments negating enablement. If this were the standard for enablement, generic claims would never be allowable in any instance in which an Examiner can imagine a single inoperative embodiment. Nor would any method be patentable, as most if not all methods are susceptible to false positive or false negative results. This is not the standard the law requires, and should not be the standard applied in this case. See, for example, in *Application of Angstadt,* 537 F.2d 498, 190 U.S.P.Q. 218 (C.C.P.A. 1976) (holding that a claimed invention was enabled, even though the claims admittedly included inoperative embodiments). This basis for the rejection should therefore also be withdrawn.

Rejections under 35 U.S.C. § 102(b)

Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Keen et

al. As amended, claim 1, from which claims 2-4 depend, is directed to a method of identifying a plant disease-resistance gene involving at least providing a plant tissue sample that includes a mutant disease-resistance gene. Keen does not teach such a method. Thus, as amended, claims 1-4 are not anticipated by Keen and the § 102(b) rejection may therefore be withdrawn.

Rejections under 35 U.S.C. § 103(a)

Claims 1-2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jaynes et al. (Plant Science, 89:43-53, 1993) in view of Daniell et al. (U.S. Patent No. 5,693,507). Applicants submit that amended claim 1 and dependent claim 2, which require that the plant tissue sample provided in the method of the invention include a mutant disease-resistance gene, are not obvious over the references cited by the Office. Specifically, Jaynes et al. do not describe or suggest the use of a plant tissue sample that includes a mutant disease-resistance gene in their screen. In addition, nothing in Daniell et al cures the deficiencies of Jaynes et al., or suggests the application of utilizing a mutant disease-resistance gene to the method presently claimed. As the combination of the cited references do not teach or suggest all of the limitations of claims 1 and 2, this rejection should be withdrawn.

CONCLUSION

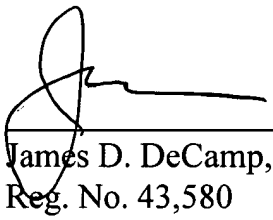
Applicants submit that the claims are in condition for allowance, and such action is respectfully requested.

Enclosed is a Petition to extend the period for replying to the Office action for three months, to and including June 22, 2005, and a check in payment of the required extension fee.

If there are any additional charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

Date: 22 June 2005



James D. DeCamp, Ph.D.
Reg. No. 43,580

Clark & Elbing LLP
101 Federal Street
Boston, MA 02110
Telephone: 617-428-0200
Facsimile: 617-428-7045